

M NO. 51-AAA
B 1952

CENTRAL INTELLIGENCE AGENCY

CLASSIFICATION

SECRET/CONTROL - U.S. OFFICIALS ONLY

25X1A

INFORMATION REPORT

REPORT NO. [REDACTED]

CD NO.

COUNTRY Hungary/USSR

DATE DISTR. 18 April 1952

SUBJECT Welding Techniques

NO. OF PAGES 2

DATE OF INFO. J [REDACTED]

NO. OF ENCLS. 25X1C
(LISTED BELOW)

PLACE ACQUIRED [REDACTED]

25X1A SUPPLEMENT TO REPORT NO. 25X1X

REFERENCE COPY
DO NOT CIRCULATE

In the course of several trips to Hungary during 1951, Professor V. P. Nikitin, the Russian expert on welding, visited all the important heavy industries. At the conclusion of each inspection Nikitin addressed the welders, pointed out the faults of Hungarian welding techniques, acquainted them with the superior Soviet methods--obviously in preparation for their adaptation in Hungary. The following composite of his remarks might throw some light on the state of welding in the Soviet Union in 1951.

1. In Russia the arc-welding method, operated with alternating current and transformer, is used. This is more economical and more efficient than the dynamo-driven direct-current welding process, preferred by most of the American and German industries. In the Soviet Union today 80 per cent. of all installations are of the arc-welding transformer type. These STN welding transformers, equipped with air-space control, are manufactured in great quantities according to Nikitin's own specifications and patterns.* They are produced in series from 100 to 2000 amperes and in 9 types; the larger ones are cooled with fans.
2. Nikitin called attention to processes developed by Slavyanov, Benardos, Dulchevsky, and Paton. He emphasized that the Russians were the first ones to employ self-adjusters on extra-high-capacity arcs; they designed the automats which feed electrodes evenly; finally, they were the first to achieve vertical seams with welding powder.
3. The Russians possess welding machines for all tasks. They have, for instance, thyatron-pipe-operated automatic dot and line installations and machines with 10,000 Hz frequencies, which are designed to weld extra-tough metal plates. He also claimed that a Russian process which heats with electrodes the metals before they are welded, accomplishes speeds of 200-300 hour meters whereas the obsolete Hungarian process nets only 60-80 hour meters.

25X1A

SECRET/CONTROL - U.S. OFFICIALS ONLY

-2-

4. Nikitin concluded his remarks, as a rule, by saying: "In Hungary electrical welding is still in a primitive state; the weldings are not properly checked; samples which should be submitted to graphical and chemical tests are not taken; there is no pre-heating in the Hungarian welding industry; finally, nothing has been done to date in the field of automatic welding."**

25X1A

Comments:

- * These transformers were adapted by Westinghouse and Allis Chalmers without giving due credit to Nikitin.
- ** Nikitin's depreciatory remarks concerning Hungarian welding methods are unjustified. Much of his information concerning the state of welding in Hungary is inaccurate. The Russians, on the contrary, could learn much from the Hungarian experts in welding.

SECRET/CONTROL - U.S. OFFICIALS ONLY